

REMARKS

Claims 1-19 were previously pending and claims 20-24 have been added.
Reconsideration of claims 1-24 in light of the above amendments and the following remarks is respectfully requested.

The Specification

The title has been amended as requested by the examiner.

The specification has been amended to update the serial number and filing date of cross-referenced patent applications. No new matter has been added.

Claim Rejections – 35 USC §103

Claims 1-19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Zutshi et al. (U.S. Patent No. 6,620,027) in view of Tsai et al. (U.S. Publication No. 2003/0013306). This rejection is respectfully traversed.

The Zutshi and Tsai references cannot be applied to reject claim 1 under 35 U.S.C. § 103 which provides that:

A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains ... (Emphasis added)

Claim 1 requires:

An oxide polishing process comprising:

- (a) providing a substrate having a top surface comprised of a copper layer area and a dielectric layer area;
- (b) performing a first oxide polishing step at a first polish station in a polishing tool by using a polishing pad and a slurry on a platen to contact the top surface of said substrate;
- (c) rinsing the substrate with DI water;
- (d) performing a second oxide polishing step at said first polish station by using said polishing pad and a slurry; and

(e) rinsing the substrate a second time with DI water.

In contrast, Zutshi teaches a three-step polishing process for use with a three-headed CMP system. The first step uses a first polishing composition “capable of removing copper containing material with minimal removal of a barrier material on a hard polishing pad.” (9:31-37). The second step uses a “second polishing composition [that] may selectively remove the copper-containing material over the barrier layer material.” (10:5-7). The third step uses a “third polishing composition ... to remove barrier layers materials, such as tantalum containing materials from the substrate.” (10:32-35). Zutshi addresses the problems of polishing copper containing material and barrier layers, such as dishing. (2:31-49).

Furthermore, Tsai is directed to polishing the copper material (¶[0062]) and barrier material (¶[0064]).

The Zutshi and Tsai references therefore cannot be applied to reject claim 1 because all of the claim limitation have not been met. Thus, for this independent reason, the examiner’s burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103(a) should be withdrawn.

Furthermore, any attempt to apply the teachings of the Zutshi and Tsai references to claim 1 is a classic example of a solution to a problem being obvious only after recognition of the problem by the applicant and is part of the “subject matter as a whole” language of 35 USC § 103 which should always be considered in determining the obviousness of an invention under this statute. Thus, for this independent reason, the examiner’s burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103(a) should be withdrawn.

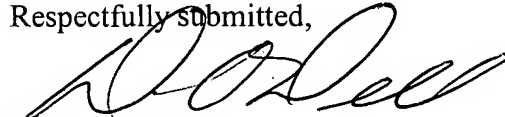
Therefore, applicant submits that claim 1 is in condition for allowance. The remaining claims are also deemed to be in condition for allowance.

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The Examiner is invited to contact the undersigned at the numbers provided below if further consideration is required. Also, Deposit Account No. 08-1394 may be used for any over or under payments.

Respectfully submitted,




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